King Kong® Rubber Toys: An Effective Enrichment Device for Captive Chimpanzees (Pan troglodytes)

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INTRODUCTION

Kong® Toys are durable rubber objects with an irregular, oblong shape, manufactured by the Kong® Company, 300 S. Lamar Ct., Lakewood, CO, 80226. They cost approximately fourteen dollars each, and can be easily washed and sanitized. The potential of these toys as environmental enrichment for monkeys and chimpanzees has been tested at a small number of captive primate facilities. For monkeys, the provision of Kong® Toys has been associated with a decline in the frequency of abnormal behaviors (Bayne et al. 1993), although this effect has not been consistent (Crockett et al. 1989; Line et al. 1991). Studies of Kong® Toy and other durable rubber toy use by captive chimpanzees indicate an increase in object manipulation and social and solitary play, and a decrease in self-manipulation and inactivity (Paquette and Prescott 1988; Brent et al. 1989; Pruetz and Bloomsmith 1992). As with monkeys, however, the amount of toy manipulation may decrease over time, even when food items are placed inside the toys (Paquette and Prescott 1988; Crockett et al. 1989; Gilbert and Wrenshall 1989; Line et al 1991). Here we report on the reactions of captive chimpanzees at the Primate Foundation of Arizona (PFA) to the larger version of the Kong® Toy, the King Kong® Toy, as an enrichment device.

METHODS

Chimpanzees at PFA are housed in social groups with rotating access to large outdoor enclosures every other day (outdoor enclosures provide 146.97m2 of floor space and 4.85m of vertical height). Indoor enclosures consist of three interconnected cages, with access to each cage controlled by a sliding metal door. Metal sliding doors are left open to provide 57.02m2 of floor space and 2.75m of vertical height. Both indoor and outdoor enclosures include a variety of cage furnishings and enrichments (Fritz and Howell 1993). During indoor rotation times, animals are provided additional environmental enrichments. Therefore, we decided to test the use and efficacy of the Kong® Toy for chimpanzees during the indoor rotation time.

A total of 35 subjects (20 male, 15 female; 24 adults greater than or equal to 10 years old, 11 subadults less than 10 years old) were observed as part of this study. Thirty-three of these subjects were housed in eight social groups, including four groups with only adult animals, two groups with both subadults and adults, and two groups with only subadults. The remaining two subjects, an adult male and an adult female, were individually-housed adjacent to social groups (shifted with other animals during the cleaning process). The King Kong® Toy was placed in one of the cages of an indoor enclosure during cleaning. Following cleaning, the door to the cage containing the toy was opened. Ad libitum observations were conducted during the first 15 minutes of a group or individual's access to the toy. Frequency and duration of contact with the toy were recorded for each subject. Duration of contact was summarized as the percentage of total time observed (15 minutes) for each subject, as well as combined totals for the group. A Mann-Whitney U test was used to test for significant age and sex differences in toy use.

RESULTS

Eighty-three percent (29 out of 35) of the subjects approached the toy within the 15 minute observation period. Duration of contact with the toy for individual animals ranged from 0%- 96% of the observation period. The two subjects individually-housed adjacent to social groups had the highest percentages for duration of contact (95% for the adult male and 96% for the adult female). The six animals that did not come into contact with the toy were all adults (two males and four females). Duration of individual contact with the toy was not significantly different by age (Mann-Whitney U=66.50, p=0.13), or by sex (Mann-Whitney U=83.00, p= 0.278). Combined total percentages for group use ranged from 1% (one group) to over 100% (see footnote1 below) (three groups).

DISCUSSION

The King Kong® Toy was a novel enrichment device for the chimpanzees. They spent a large amount of time investigating the taste and smell of the toy, and many adult animals played with the toy long after the observation period was concluded. In addition to sniffing and chewing the toy, the chimpanzees enjoyed standing on the toy and manipulating it with their feet. Because of its unusual oblong shape, the King Kong® Toy responded unpredictably to being thrown. Often the chimpanzees threw the toy and then chased it in bouts of solitary play. Many of the adult males played with the toy and would utilize it during a display. The toy also facilitated social play. In the subadult social groups, the toy was a desired object and the chimpanzees would chase each other with the apparent aim of getting the toy. Tug-of-wars often resulted.

High percentages of use by the two chimpanzees individually-housed adjacent to social groups suggests that the King Kong® Toy may be an especially effective enrichment device for individually-housed animals. In the case of socially-housed animals, the pattern of toy use at PFA in many cases reflected the hierarchies of the group, with lower ranking animals having to wait his or her turn to examine the toy. Previous research on rubber toy use in a small (N=4) group of zoo chimpanzees suggests that interest in the toys may decline over time (Paquette and Prescott 1988). This study did not test for such a decline in interest. However, one large captive chimpanzee colony reports sustained interest in durable, indestructible toys such as Kong® Toys and Boomer balls (Brent 1992). We recommend rotating the toy from group to group to help maintain its novelty. Because Kong® Toys have the potential to transmit bacteria (Bayne et al. 1993), the toy should be washed and sanitized before rotating it into a new group.

1 Combined total percentages for group use were more than 100% when multiple animals were in simultaneous contact with the toy.

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